

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listing of claims in the application.

1. (Currently Amended) An electrically active textile article comprising:
 - fabric;
 - a flexible circuit including traces and pads on a flexible substrate, said substrate welded onto the fabric surface by ultrasonic welding or radio frequency processes ~~a thermoplastic reflow process~~; and
 - at least one electronic component populating the circuit.
2. (Cancelled)
3. (Original) The article of claim 1 in which the traces and pads are electrically conductive.
4. (Previously Presented) The article of claim 1 in which the thermoplastic reflow process is chosen from the group consisting of ultrasonic welding, rf welding, and thermal lamination.
5. (Previously Presented) The article of claim 4 in which the circuit substrate is welded onto the fabric about the periphery of the substrate.

6. (Original) The article of claim 1 in which the circuit substrate includes a perimeter bond area devoid of traces and pads and the perimeter bond area is secured to the fabric.

7. (Withdrawn) The article of claim 1 in which an adhesive secures the substrate to the fabric.

8. (Withdrawn) The article of claim 1 in which threads secure the substrate to the fabric.

9. (Original) The article of claim 1 further including a protective covering over the circuit.

10. (Original) The article of claim 9 in which the protective covering is made of a waterproof material.

11. (Original) The article of claim 9 in which the protective covering extends onto the fabric.

12. (Original) The article of claim 3 in which the substrate is a thermoplastic material and the conductive traces and pads are metal.

13. (Original) The article of claim 1 in which the fabric is selected from the group consisting of woven, knit, non-woven, and braided fabrics.

14. (Original) The article of claim 13 in which the fabric is a portion of a wearable article.

15. (Withdrawn) The article of claim 1 further including stress relief areas which promote flexure of the circuit substrate.

16. (Withdrawn) The article of claim 15 in which the stress relief areas are cut-outs in the edges of the substrate.

17. (Withdrawn) The article of claim 15 in which the stress relief areas are cut-outs through the substrate.

18. (Withdrawn) The article of claim 15 in which the stress relief areas include material added to the substrate.

19. (Withdrawn) The article of claim 15 in which the stress relief areas are located between electronic components on the circuit.

20. (Withdrawn) The article of claim 1 in which there are two flex circuits secured to the fabric and electrical interconnections between the two flex circuits.

21. (Withdrawn) The article of claim 20 in which the two flex circuits are secured to the fabric by at least one zipper including at least two electrically conductive teeth for the electrical interconnections.

22. (Withdrawn) The article of claim 20 in which the two flex circuits are secured to the fabric by at least one pair of VELCRO[®] patches with at least a portion of the patches being an electrically conductive material for the electrical interconnections.

23. (Withdrawn) The article of claim 20 in which the two flex circuits include conductive solder pads and the fabric includes polyester-coated copper fabric, the conductive solder pads and the polyester coating being melted to form the electrical interconnections.

24. (Cancelled)

25. (Withdrawn) An electrically active textile article comprising:
fabric;
a flex circuit including conductive traces and pads on a flexible substrate secured to the fabric, the flex circuit including stress relief areas to promote flexure of the flex circuit on the fabric;
at least one electronic component populating the flex circuit;
and

a protective covering over the flex circuit and the at least one electronic component.

26. (Currently Amended) An electrically active textile article comprising:

fabric;

a flex circuit including conductive traces and pads on a flexible substrate;

at least one electronic component populating the flex circuit;

and

a covering welded onto the fabric surface over the flex circuit and the at least one electronic component by ultrasonic welding or radio frequency processes ~~a thermoplastic reflow process~~, wherein the flex circuit is in pressed engagement with the fabric and the covering.

27. (Cancelled)

28. (New) An electrically active textile article comprising:

an article of clothing;

a flexible circuit including traces and pads on a flexible substrate, said substrate welded onto a surface of the article of clothing by ultrasonic welding or radio frequency processes;

at least one electronic component populating the
circuit; and
a protective covering over the flex circuit and the at
least one electronic component.